

TRANSDISCIPLINARY APPROACH TO SPEECH THERAPY WITH CHILDREN WITH ALALIA

Karimova Shoira Tursunovna¹

*¹Independent researcher of TSPU named after Nizami
Speech therapist "LOGOS MARKAZ"*

ABSTRACT

The article discloses the practical side of the transdisciplinary approach in speech therapy work and rehabilitation of children with alalia. In diagnosing speech disorders, the author believes that the behavior of children with alalia is closely related to the physiological activity of the brain, that diagnosis of speech disorders based on EEG and neuropsychological methods, as well as knowledge of the insufficiency of individual brain structures, which is supported by data from electroencephalographic research, are important for speech therapists in complex rehabilitation. Binaural therapy (individual alpha balance correction program) was used for children after EEG diagnosis of their dominant alpha rhythm, which matched their dominant rhythm in the selected time interval.

Keywords: speech, speech disorders, child, transdisciplinary approach, relevance, neuropsychology, psychophysiology, alpha-rhythm, nevrology, habilitation, rehabilitation, electroencephalogram, implications, relevance, mental and physical health, abilitation, rehabilitation.

1. INTRODUCTION

Currently, speech therapy, like many other disciplines, cannot remain traditional. Although we know about the connection of speech therapy with other sciences such as psychology, neuropsychology, neurophysiology, linguistics, psycholinguistics, etc. In the training of speech therapists, defectologists, these knowledge is learned by them purely theoretically, without finding its application in speech-therapy practice. In this regard, in this message we want to reveal the practical side of speech therapy in the rehabilitation of children, adolescents and adults with certain speech disorders. This means that both in examination and in correction and prevention, we apply neuropsychological technologies that provide objective diagnosis. This gives us speech therapists the opportunity to develop and apply an individual coping program, reducing the time for habilitation and rehabilitation. This approach increases the effectiveness of the results and means that neurologopedia is an interdisciplinary and multidisciplinary subject. Higher mental functions have a complex structure, they add up in ontogenesis, social in origin are formed lifetime, under the influence of social factors, mediated in their psychological structure (mainly using the speech system) and arbitrary in the nature of regulation. In our opinion, neurologopedia opens a new direction for the use of specialists working with children and adults who have disorders of speech, behavior and other higher mental functions, and is also a powerful incentive to create new corrective and restorative methods. The need to overcome one or another violation of speech is dictated by the social meaning of speech, and the possibility of preo and from a correct understanding of its essence, which makes it possible to use the most effective means of overcoming it. Overcoming and, to a large extent, preventing speech disorders is based on compensatory capabilities of a person, and, in particular, his brain [7 c.7] Neurologopedia is an interdisciplinary and multidisciplinary section of neurodefectology. It is closely related to psychology, neurology, linguistics, psycholinguistics and neuropsychology. According to Wiesel T.G., for defectology, neuropsychology allows you to understand the brain mechanisms of various developmental disorders; expand the range of diagnostic methods; to choose optimal methods of corrective work based on patterns of interzonal interactions in the brain. [2 pages 16]

2. MATERIALS AND METHODS

While working at the LOGOS training and correction speech center with children with mental and speech disorders, we began to study the mechanisms of speech disorders more. These searches led us to study the activities of the brain, to the object of neuropsychology - the science of the connection between the work of the brain and human behavior. According to Mastyukova E.M., [4.s.3.4] clinical diagnostic significance of symptom complex of general speech underdevelopment depends on peculiarities of its structural combinations with data of pediatric, neurologic, psychopathological and additional methods of examination of a child. This approach determines the possibility of making both a medical and speech-therapy diagnosis with clarification of the structure of the primary speech defect.. Such a differential is necessary in order to distinguish the general underdevelopment of speech from various types of delay in mental development, mild forms of mental retardation complicated by a speech defect (exogenous and hereditary nature), current neuropsychiatric diseases leading to underdevelopment of speech, "distorted" mental development like early childhood autism. Electroencephalographic (EEG) study of children with different pathologies, which is included in mandatory

on procedures, often reduced only to the detection of epileptic activity. However, EEG contains much more information that is useful for assessing the state of the child, meeting his EEG age norm, for diagnosing syndromic forms of mental pathology. However, this side of the diagnosis of us speech therapists is not interested, it was important for us, studying the EEG of children with speech disorders, to know the parameters of the norm and pathology.

According to Pravdina O.V., the personality features of a motor alalik are expressed in some retardation or, on the contrary, in increased excitability and sensitivity (indecision, offensiveness). These features, on the one hand, depend on the underdevelopment of the central nervous system, on the other hand, they are the result of the fact that speech inferiority and general motor awkwardness turn off the child from the children's collective and increasingly injure his psyche with age, especially since among motorized alaliks a fairly large percentage of children, in which the delay of intellectual development is secondary and is eliminated as speech develops. [7c.208.] By diagnosing speech disorders and knowing that all disorders of speech and behavior of children are directly related to the physiological activity of the brain, we began to diagnose speech disorders based on EEG and neuropsychological methods, as well as the state of distribution of alpha rhythms in children. Local insufficiency of individual brain structures is confirmed by electroencephalographic study data. Some children are characterized by increased excitability, fragmentation, motor distress, in especially difficult cases - with a raised euphoric mood background. In some cases, the syndrome is combined with the manifestation of hyperactivity - signs of general emotional and motor anxiety; in others with predominance for braking, lethargy, passivity. Neurolike syndromes may also be observed in the form of fears, general anxiety, sleep disorders, facial muscle tics temperatures, viscosity and inertness of emotional reactions and behavior, nature of changes on EEG.. [4 c.7.]

Children who passed the initial consultation of speech therapist in the training and speech therapy center for the period 2017-2019 years

Table No. 1

| | Number of people | | | | | | | | | |
|------|---------------------|-----|------------|-----|--------|-----|--------------|-----|-----|-----|
| | Diagnosis of Alalia | | Stuttering | | SA, CI | | Autism (RAS) | | | |
| 2017 | 28 | 30% | 45 | 49% | 10 | 12% | 8 | 9% | 91 | 100 |
| 2018 | 45 | 50% | 21 | 23% | 13 | 14% | 12 | 13% | 91 | 100 |
| 2019 | 113 | 55% | 69 | 34% | 11 | 6% | 10 | 5% | 203 | 100 |
| | 186 | 45% | 135 | 35% | 34 | 11% | 30 | 9% | 385 | 100 |

Table No. 1 shows the number of children who passed the initial consultation of a speech therapist-defectologist in the training and speech therapy center for the period 2017-2019 years. Of the 800 patients examined, 385 attended classes in the speech therapy office. Of the 385 children examined in 3 years diagnosed with alalia, 186 people (45%), 135 people diagnosed with stuttering (35%), CI and hearing impaired 34 (11%), Autism and ASD 30 people (9%).

3. DISCUSSION

Our results have improved much faster and more efficiently. With a child who is not able to arbitrarily regulate his behavior, it is impossible to engage, sitting at the table for a long time and expecting that he will perform tasks that will not necessarily interest him - he will not sit, listen to the teacher, do what he does not want. Help for children with severe speech disorders (at least in the first stages of work) is listening to binaural alpha rhythms. Binaural therapy (individual alpha balance correction program) was used for children after EEG diagnosis of their dominant alpha rhythm, which matched their dominant rhythm in the selected time interval. Based on the allocated frequency, a program is recorded on an electronic medium (MP3, CD) an individual pure alpha rhythm, with a layering of pleasant music. Children with speech disorders (including children with alalia) have low ability and interest in learning; hyperactivity, inattention, conflict; deviation in behavior; frequent headaches and enuresis. Parents at home put on stereo headphones to the child and allowed them to listen to pleasant music with individual rhythms for half an hour twice a day. After a certain period of time, the imposed dominant rhythm rebuilds the brain, normalizing functioning, starting to normalize the mental and physical state of the body. After binaural therapy, memory, concentration, attention are also improved. After 2 months of listening to individual binaural rhythms, the child's behavior changes significantly, he becomes more calm and interest in classes appears. The dynamics are also observed in a repeated EEG study, which is carried out 2 months after listening to alpha rhythms. Further, according to the EEG research, relying on dynamics, the psychophysiological creates the second stage of the alpha rhythm program. Speech therapist begins work on further correction of the child's speech. We give examples of children with motor alalia against the background of organic changes in the brain.

Child K., 5 years old. Diagnosis: cerebral palsy, spastic syndrome. Pseudobulbar dysarthria. Motor alalia. From a history: a child from the 1st physiologically occurring pregnancy, 1 urgent rapid birth, birth weight - 3000 g (double), height - 54 cm. Rating on the Apgar scale 6 points. During the first 12 hours of life, lethargy, weakness of sucking were noted. Imparted in the hospital, discharged on the 3rd day. Early development corresponds to age. After 6 months at turns, and then when crawling the child, parents drew attention to the lag in the movements of the right hand - the brush was more often clamped, the child rarely took toys with his right hand. The beginning of independent walking is at 5 years 2 months, walking with the support of the front foot on the right. Diagnosed cerebral palsy, the child began to receive comprehensive rehabilitation. Pre-speech development: in the 3rd year of life, speech activity is poor (mainly walking), it does not appear in the 4th year. By the age of 4, the child was well aware of the addressed speech, complied with complex instructions, knew colors, at the request of the index finger of his left hand he showed objects in the pictures, independently ate a spoon by the age of 5 (holding it in his left hand). Active vocabulary - several petal words. After 2 years, parents turned to a neurologist and speech therapist with complaints about the child's lag in speech. In the neurological status: crank on the right, face symmetrically, tongue in hypertonus. On the right, muscle tone is increased, mainly in the hand and in the leg on the right. The right heel is not supported. The coordinating sphere corresponds to age. There is no free speech. He uses gestures and facial expressions to communicate. MRI: signs of pale ball damage (bilirubin encephalopathy) Night video EEG monitoring: the focus of increased synchrony in subcortical brain structures, against the background of general cerebral changes. EEG By the type of reduction of bioelectric activity of the brain. In the child, the alpha rhythm is not formed, delta and theta activity dominates. This case is very indicative of children with spastic cerebral palsy syndrome]. After alpha stimulation, pharmacotherapy, general massage, DENAS therapy, logomassage, the child underwent changes in both behavior and EEG - a dominant rhythm of 6-7 Hz in the occipital departments with an amplitude of 60Mkv, no epileptivity was detected.

Child D., 7, Addressed a speech therapist to our Speech Medicine Center complaining of a speech lag.

From a childbirth. Early development corresponded to age. Later, the formation of speech was noted: free speech appeared after 3 years. Corrective work on speech development was carried out, but little effectively. He attended a specialized kindergarten, embarrassment was noted when performing applications and drawings. Graphic skills were slowly formed. Upon examination, no focal symptomatology was detected in the neurological status. 07.02.18 - started complex work (alpha stimulation, neurological treatment, neuropsychological correction, BAT massage, Denas stimulation). the child is recommended classes with a speech therapist. Cerebral EEG readings dated 09.06.2018 On the background record. alpha rhythm is recorded with amplitude of 19 Mv. on the right and 17 Mv on the left. Alpha rhythm dominates the central leads (should be normal in the back of the head). Low-frequency beta rhythm from left to 24 MkV and from right to 26 MkV (and normally it should be 15-20 MkV). Beta rhythm dominates in central leads (normally Beta rhythm should be in frontal leads). Conclusion: Changes in the bioelectric activity of a general cerebral nature. During background recording and photostimulation, epileptiform activity was recorded in the form of acute waves mainly from the central occipital parts of the brain. Based on the history and data from clinical studies, the diagnosis of «моторная алалия» confirmed. After a comprehensive pharmacological treatment, Denas therapy, binaural therapy, speech therapy massage and speech therapist, the EEG result from 09.09.2019: on the background record, alpha rhythm is recorded with an amplitude of 37 Mv. on the right and 35 Mv on the left. Alpha rhythm dominates in the occipital area of the leads (should be normal in the back of the head). Low-frequency beta rhythm on the left up to 18 MkV and on the right 19 MkV (and in the norm should be 15-20 MkV). Beta rhythm dominates in the frontal leads (in the norm Beta rhythm should be in the frontal leads). Conclusion: Changes in the bioelectric activity of the brain. Irritative excitability. Improvements in child speech development b RESULTS

Results of integrated speech therapy work with children with alalia

Table 2

| YEAR | Children with alalia | | | | |
|------|----------------------|------------------|------------------------------|---------------------|-----|
| | The general Quantity | With Good Speech | With Significant Improvement | Without Improvement | |
| 2017 | 28 | 20 | 71% | 8 | 28% |
| 2018 | 46 | 32 | 71% | 13 | 28% |
| 2019 | 113 | 40 | 35% | 73 | 64% |
| | 186 | 92 | 59% | 94 | 40% |
| | | | | | 2 |

Table No. 2 shows the data after comprehensive speech therapy work with children diagnosed with alalia. For 3 years over the period from 2017-2019, we have received good results, applying an integrated approach in speech therapy work - this is pharmacological treatment, Denas therapy, the individual program "ALPHA BALANCE," speech therapy massage and speech therapist classes. Children attended speech therapy classes for 2 years 3 times a week. Out of 186 children with alalia with good speech, 92 people received a result

(59%), with a significant improvement of 94 children (40%), with no improvement of 1 child (2%). Our integrated approach has evolved gradually. Speech classes with children were conducted according to the individual program developed by us. Classes were held 3 times a week, after 5 months of listening to alpha rhythms, conducted by Denas stimulation, neuropsychological correction of BAT massage in children showed significant changes in behavior and improved speech.

4. CONCLUSION

Thus, using a comprehensive approach in speech-therapy work with children who have disorders of psycho-speech development, we significantly improve the speech-therapy process to overcome alalia in children. Analyzing the transdisciplinary approach in speech therapy work with children with alalia, we note that this activity is in the sphere of interests of many disciplines: medicine, neurology, psychology, speech therapy, speech psychology. Currently, we work in a team of professionals that helps the family in abelitating and rehabilitating a child with alalia - these are: a neurologist, psychologist, speech therapist, osteopath and rehabilitologist and other specialists, depending on the needs of the child.

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